

Australian Historic Engineering Plaquing Program

**NOMINATION**

**For the award of a  
HISTORIC ENGINEERING MARKER PLAQUE**

**commemorating  
THE SAUNDERS QUARRYING OPERATIONS  
IN PYRMONT-ULTIMO, NEW SOUTH WALES**

Submitted on behalf of the Centenary Stonework Program  
of the  
New South Wales Department of Commerce

**March 2005**

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## **1 INTRODUCTION**

This is a nomination under the Australian Historic Engineering Plaquing Program for the award of a plaque commemorating the Saunders quarrying operations in Pyrmont-Ultimo. It has the support of the NSW Department of Commerce, Powerhouse Museum and the Sydney Harbour Foreshore Authority. Documentation of this support forms part of the nomination.

It is an unusual nomination because of the fact that in Pyrmont-Ultimo, the locale of the Saunders activities for three-quarters of a century, the only important surviving evidence of their work comprises some striking sandstone cuttings and former quarry faces, one street name and a handful of significant stone structures.

The nomination was initiated by Ron Powell, Manager of the Centenary Stonework Program of the New South Wales Department of Commerce, and researched in 2004 by Robert Irving, OAM, ARMTC (Melb), MArch (NSW), FRAHS, Architect, Architectural Historian and Heritage Consultant. Irving is author of the forthcoming book tentatively titled *Paradise, Purgatory and Hell Hole: the Story of the Saunders Quarries, Pyrmont*, which will be an extended version of the Historical Outline given in Section 4 of this nomination.

## **2 BASIC DATA**

### **2.1 Item Name**

The name of the item is *The Saunders Quarrying Operations in Pyrmont-Ultimo, 1853-1930*. This encompasses the yellowblock sandstone quarrying operations and building activities in the Pyrmont-Ultimo area begun by the founder Charles Saunders and continued by his son Robert and grandson Robert Junior.

The Saunders influence underlies a large range of very significant structures outside Pyrmont-Ultimo, built from Saunders' yellowblock, which are fundamental to Victorian Sydney's identity as a 'sandstone city'. Although these associations are beyond the particular scope of this nomination, they provide important background and contextual information, some of which is given in the following pages.

### **1.2 Location**

The quarries were in various locations in Pyrmont and Ultimo. The most famous were known by the names of Paradise, Purgatory and Hell Hole. The quarries have been worked out, reclaimed and are now largely built over. Some former sandstone quarry faces and several exposed sandstone cliffs can be seen. The extent of the three main quarries and some associated features are shown on the map given on page 13.

Most of the 50 or so Pyrmont-Ultimo buildings erected or owned by the Saunders firm as contractors have been demolished in the process of 20th-century industrialisation and development. One that still survives is called Saunders Terrace, a three-storey terrace group on a prominent corner, comprising shops and a former bank at street level. Another Saunders building is the former Quarryman's Arms Hotel. Other physical evidence, though less obvious, may still be seen, and some is described in these pages.

The many impressive structures in the CBD and suburbs of Sydney and beyond, built or faced with Pyrmont yellowblock sandstone, are of course not part of this nomination. Most of them are in good order, many have been carefully restored, and a high proportion are already recognised heritage items. Some are mentioned later and are also described in *Paradise, Purgatory and Hell Hole*.

The Centenary Stonework Program of the NSW Department of Commerce is dedicated to a continuous program of conservation of public buildings including the ones named in Section 4 of this nomination. For these purposes the Program has established a substantial stockpile of high quality Pyrmont yellowblock sandstone, from such sources as excavations for basement storeys of large new buildings in Pyrmont and The Rocks.

**2.3            Owner**

The Saunders quarries were originally located on sites *leased* on a long-term basis from John Harris’s Ultimo Estate. At least one quarry site, with a Miller Street address, was *owned* in 1891 by Robert Saunders. Since then land ownership has increased and diversified considerably. Particularly since 1994, much of the Pyrmont-Ultimo area has come under the umbrella of the State Government’s Sydney Harbour Foreshore Authority (formerly the City West Development Corporation), owner of the site which is considered most suitable for the location of a plaque. This site is intended to be handed over to the City of Sydney.

The whole area is part of a broad urban development and planning scheme known as *Ultimo + Pyrmont*, given that name by the Department of Infrastructure and Planning in 2004, the Year of the Built Environment. The present urban hub is Union Square, at the corner of Harris, Miller and Union Streets.

**2.4            Current use**

‘Ultimo + Pyrmont’ now evidences a greater variety of uses than at any time in the past (though none of the heavy industries remains). As well as retained traditional buildings and functions, these uses range from high-density apartment blocks to town houses, public and ‘affordable’ housing, business accommodation, heritage projects, public open space, parks and gardens.

Indications of the changes now being experienced can be seen in some statistics taken from the booklet *Ultimo + Pyrmont: Decade of Renewal*, published by the Minister for Infrastructure and Planning. The population of the area in 1901 was 19,000; in 1994 it was 3,000. It is now something like 13,000 and is expected to reach about 20,000 in 2021. In 1994 there were three public places; there are now 15. Some five percent of the area had harbour access in 1994, while the present figure is 60% of the peninsular shoreline. By 2008 it is intended that 100% of the area will have public access to the water.

**2.5            Former use**

As mentioned earlier, Saunders quarries and stone working operations were located in three key quarry sites known colloquially as Paradise (Miller and Bank Streets), Purgatory (Wattle Crescent and Allen Street) and Hell Hole (Wattle, Fig and Quarry Streets). Charles always lived in Harris Street, not far from ‘Paradise’, while Robert lived for many years in Abattoirs Road (now Bank Street, also located near ‘Paradise’), moving later to a cottage in Mount Street and later still to a property in Centennial Park, where he lived until his death. There

were other quarry sites, stone workshops, workers' housing, a wharf and a further variety of miscellaneous structures. The known locations of some of these are shown on the map at page 13.

**2.6 Period of operation**

Charles Saunders began quarrying in what is now Pymont (then part of the Ultimo Estate) in 1853. Under his Son Robert and grandson Robert Jr, the quarries continued to operate until 1930. The Saunders firm then continued winning sandstone until the late 1930s, in the Bondi quarry that had been established by Robert Saunders Jr in about 1924.

**2.7 Physical description and condition**

As mentioned above, surprisingly little of the fabric of these comprehensive operations now survives in the Pymont-Ultimo area. In contrast, the available documentary evidence is both sufficient and engaging, permitting a very good understanding of the Saunders family firm and its activities.

**2.8 History**

This is given in greater detail in Section 4 of this nomination.

In brief, Charles Saunders began his operation in Ultimo (now Pymont) in the early years of the gold rush. The work of his firm expanded in the boom years which followed, during which time he was joined by his entrepreneurial son Robert and later by his grandson, also Robert. The Saunders firm was not the only quarrying operation in the area, but it became the biggest and lasted the longest, well after the others had gone. The three principal quarries provided high quality Pymont yellowblock sandstone for the construction of a great number of important buildings in Sydney and beyond. As well, the firm, which became also a building contractor, erected some 50 residential and commercial buildings in Pymont-Ultimo.

Robert Saunders adopted mechanical quarrying and stone working and was the first Sydney quarry owner to use steam power for drilling, sawing and planing the stone. For example, four of the best steam cranes, with ropes of wire rather than heavy chains and hemp, were brought in for lifting stone blocks, as were several smaller hand cranes, replacing what Saunders described as 'the old style of gallows cranes.' (Refer to Section 4.3.2).

The operation came to an end just prior to World War II as the demand for sandstone diminished, but not before Robert Saunders Jr had established a Sydney sandstone quarry in Bondi, almost all trace of which has now also disappeared.

**2.9 Heritage listings**

The following registers contain items that have or are believed to have had associations with the Saunders family and their operations in Pymont-Ultimo —

(a) Sydney Regional Environmental Plan No 26: City West

These items are numbered in Schedule 4 of the REP —

- 58. Terraces, 99-125 Harris Street. This includes the so-called Saunders Terrace, the three-storeyed group at the corner of Miller Street;
- 75. Terrace houses, 5-15 Mount Street;
- 76. Terrace houses, 75-77 John Street;
- 77. John Street Annex [originally the John Street Public School];  
Saunders yellowblock was used in components including substantial lintels.
- 100. Escarpment face at the western end of John Street [also known as the Saunders Street Cliff Face];
- 118. Maybanke Kindergarten and Playground, 99 Harris Street.

\*\* Note: Other buildings known to have been owned or erected by the Saunders firm still exist but have not been recognised by listing in the schedule. Research is continuing to identify these.

(b) The National Trust of Australia (NSW)

Trust listings have no statutory power. They are given here simply because the Trust was the first body to recognise heritage significance. In the Trust's Register the 'Pyrmont Square Group' (which takes in Union Square) includes —

- The Saunders Terrace [in the Register it is called Georgian Terrace], 117-125 Harris Street;
- The former Primitive Methodist Chapel, 99 Harris Street [Maybanke Kindergarten];
- The terraces at 101-115 Harris Street [parts of these groups are possibly the work of the Saunders family];
- The former public school, John Street, corner of Mount Street [which has stone components doubtless provided by Saunders quarries];
- The 'Mount Street Group' comprises terrace houses at 5, 7, 9, 11, 13 and 15 Mount Street [possibly built by the Saunders family].

\*\* Note: The Quarryman's Hotel listed in the Register is the building presently licensed under that name in Harris Street, not the Quarryman's Arms Hotel kept by Charles Saunders on the corner of Mount and John Streets from the 1850s to the 1870s.

(c) The State Heritage Register

Similar listings to those of the National Trust.

(d) The Australian Heritage Commission: Register of the National Estate

Similar listings to those of the National Trust.

### **3 ASSESSMENT OF SIGNIFICANCE**

#### **3.1 Preamble**

Significance has been assessed in relation to the criteria given in the volume of the Heritage Manual of the New South Wales Heritage Office entitled *Heritage Assessments*. The criteria are also part of the Australia ICOMOS *Charter for the*

*Conservation of Places of Cultural Significance* (as in *The Illustrated Burra Charter*, published by Australia ICOMOS, Burwood, 2004). The following headings come from that Charter and are modified to include State Heritage considerations.

*The Burra Charter* states that cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. The *Charter* further explains that cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.

It is generally understood that in order for an item to be worthy of recognition as an item of the heritage, a place must satisfy at least one of these criteria. This nomination argues that the aesthetic, historic, scientific and social values of the Saunders quarrying operations can be demonstrated in various ways.

### **3.2 Aesthetic significance**

This includes scenic, landscape and architectural qualities as well as creative accomplishment. In this nomination aesthetic significance is embodied in —

- (a) the landscape and topography of Pymont-Ultimo; now considerably modified in relation to the terrain that was visible during the time of the Saunders operations. However, some rockfaces survive which express or suggest quarrying activities. The most readily accessible are
  - (i) the one which towers above the walkway off Quarry Master Drive, part of the area now known as Distillery Hill, and
  - (ii) the one that rises from the north end of the south part of Mount Street.

Their aesthetic significance lies mainly in their impressive scale as large features of the landform, their colours and various textures, and their ability to evoke the character of quarrying operations;

- (b) the surviving Saunders buildings in Pymont-Ultimo. These include
  - (i) the so-called Saunders Terrace in Union Square, a simple but quite fine three-storey ashlar-faced corner group, comprising a former bank and shops with office and residential apartments above and displaying the Victorian Regency style of architecture;
  - (ii) the former Quarryman's Arms Hotel (now a residence), a pleasing example of a corner pub in the Victorian Regency style (not the pub presently called the Quarryman's Arms);
  - (iii) The former Primitive Methodist Chapel, a brick church in the Victorian Free Gothic style of architecture, built on land donated by Charles Saunders. It is now the Maybanke Kindergarten;
  - (iv) a further handful of survivors of the 50-or-so buildings that have been identified as having been owned and/or built by the Saunders firm. Their locations have been found, but the buildings are not included here because further research is necessary.
- (c) the numerous significant structures outside Pymont which exhibit Pymont yellowblock sandstone taken from the Saunders quarries.

Aesthetically some of the best-known examples in Sydney include the GPO; buildings at Sydney University; the Lands Department, including the niche statues; the Colonial Secretary's Building; the Australian Museum; the QVB; Central Railway Station; and the Burns Philp Building. An especially fine example is the domed ceiling construction of the Art Gallery vestibule.

The aesthetic values of these places are well recorded in many publications and heritage registers.

### **3.3 Historic significance**

#### **(a) Evolution, individuals and associations**

The entire story of the quarries and operations of the Saunders firm has compelling historic significance. This focusses upon the three Saunders generations and their activities in land use, occupation, industrial development and building construction and decoration.

Historical significance is also embodied in the development of and changes to the Pyrmont peninsula, its topography and character and the place of quarrying in this development.

The principals of the Saunders firm were associated at various times with historically important architects and builders for whom the firm supplied building stone. These included Colonial Architects Edmund Blacket and James Barnet; Government Architect Walter Liberty Vernon; the great builder John Young; and many other architects including William Kemp and McCredie & Anderson.

#### **(b) Themes: Australian/State/Regional/Local**

By application of the material in official Australian heritage documentation, the Australian themes expressed in the Saunders operations may be said to include—

Developing local, regional and national economies;  
Building settlements, towns and cities;  
Working.

State themes include —

Commerce; Environment — cultural landscape;  
Industry; Technology; Persons.

### **3.4 Scientific or technical significance**

#### **(a) Context**

Stone quarrying is an activity which appears to be relatively unacknowledged and inadequately studied in Australia. Its technical significance in Pyrmont-Ultimo is related to the development of quarrying expansion, processes and equipment; the growth and progress of the building industry, especially in times of economic optimism; and, in particular, the influence of the quality of Pyrmont yellowblock sandstone on the buildings of Sydney, for instance in their scale, form, carved detailing and embellishment.

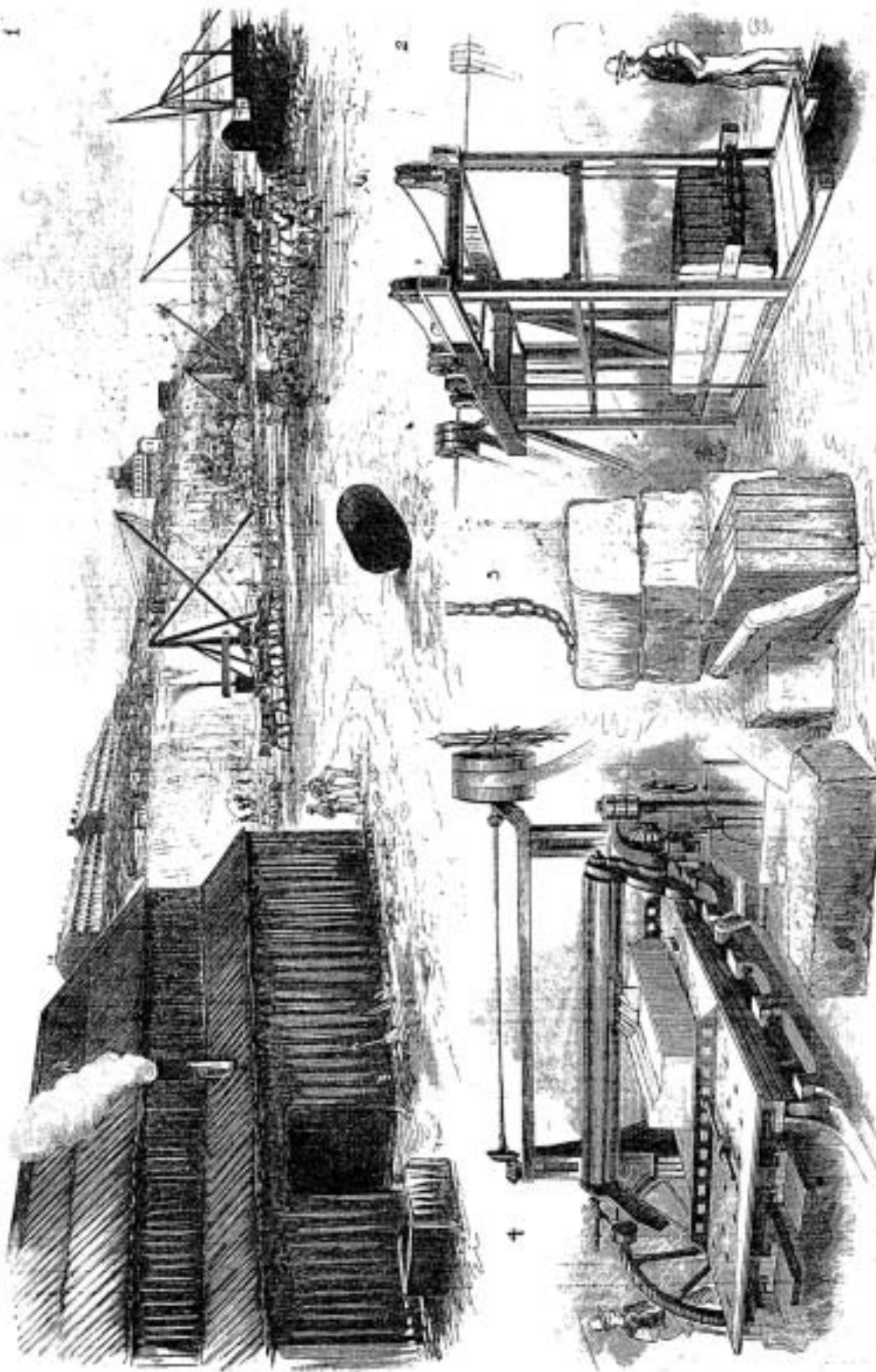
Apart from quarrying, the traditional trades associated with stone masonry were those of —

- (i) The rubble mason, who prepared quarried blocks of stone for such works as building walls, retaining walls and flagging;
- (ii) the fixer, who placed the stone in position;
- (iii) the banker mason, who was highly trained to cut stone to various forms. Such cut blocks are also referred to as dimension stone and are commonly used in ashlar construction, which is characterised by thin mortar joints. The banker was the pile of stone that formed a bench on which were reproduced the simple geometrical and decorative forms for a building such as string courses and mouldings; and
- (iv) the carver and sculptor.

Robert Saunders introduced quarrying and stoneworking equipment and techniques that had not previously been seen in Australia. These developments modified the age-old trades, so that as well as quarrying, in which newer steam drills and cranes were employed, Saunders brought into the firm's workshops large-scale British steam-driven multi-blade masonry saws and heavy planing and moulding machinery (refer to Section 4.3.2). Thus Robert Saunders, as both quarry-master and contractor, could embrace the trades and skills of the quarryman, the rubble mason, the fixer and the banker. The firm is not known to have contracted for detailed carving or sculpture.

(b) Research and educational potential

Research and educational potential is contained in the available historical, descriptive and illustrative documentation not only of Pymont and Ultimo but also of quarrying practices, the trades associated with stonemasonry and in respect of the study and interpretation of architecture wherein sandstone has been important. There is also likely to be further potential in the investigation of family papers and business documentation.



This engraving was published in the *Town and Country Journal*, 8 December 1883. Its caption reads *THE FREESTONE QUARRIES AT PYRMONT, SYDNEY, NEW SOUTH WALES.*

1. The North [sic] Quarries of Mr Robert Saunders, from the side of the Machinery House. 2. Stone Sawing Machine.

3. Stone in the Rough, and Sawn for Flaggings, &c. 4. Planing and Moulding Stone.

[Some of the explanatory text accompanying this picture in the *Journal* is given in Section 4.3 of this nomination].

(Link to a zoomable version <[HERE](#)>)

### **3.5 Social significance**

Although the Heritage Office has insisted that this significance should focus on contemporary (i.e. present-day) community esteem, the influence of social factors in the historical development of the Saunders operations must also be acknowledged. This may be appreciated, for instance, in the relationships between the firm, their employees, and in the Saunders' participation as influential citizens of the suburb of Pyrmont, as for instance in the erection of workers' housing and other community buildings.

Present-day social significance is contained in the recognition of the qualities of the surviving local Saunders structures as well as the community's reaction to, and appreciation of, the landscape and terrain that can now be seen to have resulted from extensive quarrying operations.

Perhaps the most widespread and enduring social significance is embodied in the product of the Saunders quarries. The aesthetic and durability properties of yellowblock sandstone have been, and continue to be, a major factor in the reputation of Sydney as a 'sandstone city', thanks to its collection of fine public, educational and commercial buildings of the Victorian and Federation periods.

### **3.6 Spiritual significance**

No specific evidence of indigenous (i.e. Aboriginal) spiritual significance has been discovered.

### **3.7 Comparative significance**

#### **(a) Rarity/representativeness**

The surviving physical evidence of the Saunders quarrying and building operations in Pyrmont-Ultimo is now rare.

The architectural evidence outside Pyrmont, in a wide-ranging set of buildings, and much of their detailing, is representative of the Saunders activities and influence in the architecture of New South Wales. In particular, as already stated, Pyrmont yellowblock made an important contribution to Sydney's unique character.

#### **(b) Levels of significance**

The physical evidence of the Saunders quarries and buildings in Pyrmont, and in substantial buildings in Sydney, is of significance not only to the City of Sydney but also to the State of New South Wales.

### **3.8 Summary Statement of Significance**

The Saunders quarries in Pyrmont-Ultimo played an important role in the growth and development of Australia by providing first-class yellowblock building and sculptural sandstone for a large number of projects designed by important Australian architects and executed by Australian craftsmen, not merely in Sydney and its suburbs but also in other cities in NSW, in several other Australian capitals, and overseas.

The firm founded by Charles Saunders and continued by his son and grandson was a significant participant in the growth and development of the Pyrmont-Ultimo area for three-quarters of a century, throughout the Victorian and Federation periods of Australian history. Some of the Saunders buildings still survive in the area and are now recognised as items of its history. In parts of the dramatic landscape of Pyrmont-Ultimo the effects of the quarrying operations may still be perceived.

Robert Saunders introduced quarrying and stoneworking equipment and techniques not previously seen in Australia. These included steam cranes, large steam-powered multi-blade stone saws and heavy planing and profiling machinery. The firm thereby embraced the trades and skills of the quarryman, the rubble-mason, the fixer and the banker.

The Saunders firm became the longest-lasting and eventually the only quarrying operation on the Pyrmont Peninsula.



*The impressive Saunders Street Cliff face, adjacent to the walkway that leads off Quarry Master Drive, Pyrmont. It indicates the scale of the Saunders Paradise quarry. This is recommended as a suitable location for a Historic Engineering Marker Plaque.*

(Link to a zoomable version [<HERE>](#))

### 3.9 A commemorative plaque

The Saunders operations and contribution to Pymont-Ultimo would be brought to public attention best by means of an interpretative sign. However, it is likely that the Sydney Harbour Foreshore Authority, possibly in association with the Lend Lease Corporation (which is currently developing Jackson's Landing) will erect such a sign, incorporating graphics, in Union Square. This would be capable of providing information for a self-guided walk.

This nomination therefore recommends that the Historic Engineering Marker Plaque be suitably mounted on the vertical face of the cutting known as Saunders Cliff Face, or on a marker at the entrance to its pedestrian walk which is accessed off Quarry Master Drive, at the end of Saunders Street. This location is shown on the map given on page 13. The suggested wording of the plaque is —

#### **The Saunders Quarrying Operations in Pymont-Ultimo, 1853-1930**

Charles Saunders established this quarry that became known as 'Paradise' in 1853. Its fine sandstone became known as 'yellowblock'. The Saunders operation, continued by Robert his son and Robert his grandson, was the largest and longest lived of Sydney's quarries. Two other quarries called 'Purgatory' and 'Hell Hole' were further south between Pymont Bridge Road and Quarry Street. Yellowblock was used to build, and in the 21st Century to restore, Sydney's most important Victorian and Federation public buildings

**The Institution of Engineers Australia  
Council of the City of Sydney  
2005**

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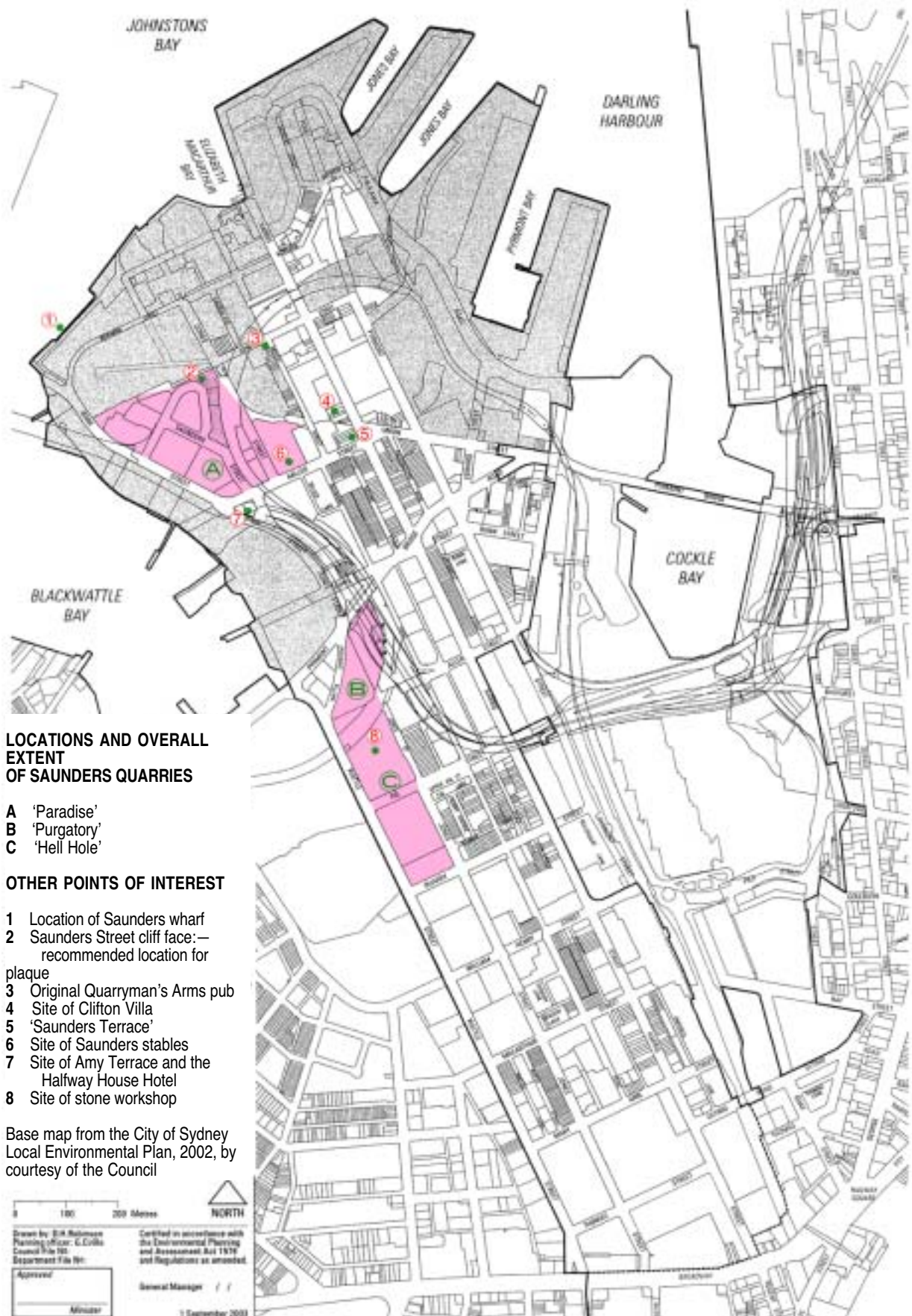
#### Unpublished sources —

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Maps and other documents, including property assessments, held in the Archives of the City of Sydney. Maps and original documents held in the Mitchell Collections of the State Library of NSW. Maps and plans held by Sydney Water. Documents held in the Library of the Royal Australian Historical Society, Sydney.

Mrs Doreen Lanning, great granddaughter of Charles Saunders, has made available her collection containing letters, family papers, memorabilia and photographs. Other family members have also provided material.

Mr Ron Powell has made papers, theses, documents and illustrations available from the resources of the Centenary Stone Program of the NSW Department of Commerce.



(Link to a zoomable version [<HERE>](#))

## 4 A NARRATIVE HISTORY OF THE SAUNDERS QUARRIES AND THEIR INFLUENCE

### 4.1 Preamble

*Strangers first visiting Sydney are often struck by the magnificence of our public buildings, the richness of their ornamentation, and the mellow tone of their colouring. These effects are due mainly to the material used in their construction, as the freestone of Sydney lends itself to the art of the stone-cutter, and in the beautiful climate of this Southern Hemisphere its tone mellows and grows rich with age, and seems to absorb into itself some of the brightness of the sun.*

— from ‘Robert Saunders, Esquire’, in *Australian Men of Mark, 1788 to 1888*.

The mellow sandstone from the quarries run by Robert Saunders may still be enjoyed in a fascinating array of buildings in Sydney city and its suburbs, in country areas and in other states. The name of Pyrmont yellowblock connotes the image of a matchless traditional Australian building material.

The operation established by Charles Saunders a century and a half ago, and expanded by members of his family, was an integral part of the Pyrmont scene, which included not only the imposing quarries but the numerous local structures built of the stone which came from them.

The dramatic and continuing metamorphosis of the peninsula has already obliterated so much of that scene that locals need to be reminded, and visitors need to be shown, the great heritage that the Saunders family left to posterity. A few of their buildings and some others which also used their stone, as well as some dramatic rock cliffs, can still be seen in Pyrmont, and one street bears the Saunders name. But there is no longer any telling sign of the quarries themselves, where what was described as the best sandstone in the world — a material that became crucial in Sydney’s growth and character — was won.

### 4.2 Beginnings

#### 4.2.1 Charles Saunders

The founder of the Saunders firm was the second son of Robert Saunders, gamekeeper, of Dean Prior, Devon. Charles arrived in Sydney on board the vessel *David McIvor* on 9 April 1852 at the age of 28 years. With him came his wife Emily,<sup>1</sup> a dressmaker, who was daughter of Andrew Morgan, a stonemason, also of Dean Prior.

The English village of Dean Prior is now all but swallowed up by the A38 which links the cities of Exeter and Plymouth. It is three kilometres south of the larger town of Buckfastleigh and not far from the edge of Dartmoor. Charles and Emily were married in the 16th-century church of St George, Dean Prior, where their families had lived for generations. But nothing is known of quarrying in the vicinity of the village. The geology of this area is characterised by granite and ‘Old Red’ sandstone. There is a basalt quarry at Buckfastleigh, the stone from which is nowadays used only for road-metal and concrete aggregate.<sup>2</sup> However just over four kilometres south of Dean Prior is the pretty little town of South Brent, where there was a quarry until about 1842. There, in the churchyard of the Norman church of St Petrock the gravestone of Andrew Morgan can still be

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<sup>1</sup> In the official record her name is given as Embling Morgan.

<sup>2</sup> Alec Clifton-Taylor, *The Pattern of English Building*, passim; Nikolaus Pevsner, *The Buildings of England: South Devon*, pp 118, 156 and passim.

seen, its inscription recording that in November 1844 he was drowned in the River Avon, which runs close by. The quarry was filled in during the succeeding years and since World War II has been partly built over. Its site is known as Quarry Park. The family tradition is that it was in this South Brent quarry that Andrew Morgan and the Saunders ancestors worked.<sup>3</sup>

Charles and Emily also brought to Australia their son Robert, aged five,<sup>4</sup> and two other children, Matilda, aged three and Charles Jr, aged eighteen months. The 344 immigrant passengers were quarantined for 40 days on account of the threat of typhus. But sadly, by early 1853 and within a few weeks of one other, both Matilda and Charles the younger had died.<sup>5</sup>

In the same year Charles leased land on the Pyrmont peninsula from the Harris family and began operations as a quarryman.<sup>6</sup> This locality was to become Sydney's first industrial waterfront suburb, its deep-water anchorages, facilitating such early activities as shipping and shipbuilding.<sup>7</sup>

#### 4.2.2 Early Pyrmont and Ultimo

The land at the north end of the peninsula, which was originally a grant to Thomas Jones, was purchased by John Macarthur in 1799. His family gave it the name Pyrmont because the area, where there was a 'pure and unadulterated spring', reminded them of a popular German spa, Bad Pyrmont, near Hanover.<sup>8</sup> Macarthur built a windmill there, and also started, but never finished, a Grecian-style house.<sup>9</sup> His estate, subdivided into building allotments including one for a church, is shown on the Plan of Sydney with Pyrmont compiled by J Basire in 1836.<sup>10</sup>

However the land where Charles Saunders began his operation was not here, but was part of Dr John Harris's substantial estate, the first section of which, an area of 34 acres in the vicinity of what is now Broadway, was granted in 1800. Here in 1804 Harris established his farm and built a residence which he called Ultimo House, which addressed the road that became Harris Street. Francis Greenway was engaged in 1814 to remodel and enlarge the house—his first architectural

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<sup>3</sup> Research by Jill and Perry Watts of Norfolk, now in the Doreen Lanning collection. For the churches of St George and St Petrock, see Pevsner pp 118, 264.

<sup>4</sup> C F Maxwell, ed, *Australian Men of Mark, 1788-1888*, gives his age incorrectly as 15 years.

<sup>5</sup> Documentary research of the family by Jessica Beck in Britain, including births, deaths, marriages and census records, and by Charles Saunders' great-grand-daughter, Doreen Lanning, in Sydney. The Immigration record for 1852 in the Archives Office (microfilm reels 2136 and 2463) gives Saunders's occupation as 'laborer'. In the English Census records of 1851 Charles Saunders, 27 years, son of Robert Saunders, gamekeeper, is recorded as 'Stone Mason'.

<sup>6</sup> This is still uncertain. It has been said that Charles learned the trade of stonemason from Emily Morgan's father and subsequently married the boss's daughter (Shirley Fitzgerald & Hilary Golder, *Pyrmont & Ultimo: Under Siege*, p 45).

<sup>7</sup> Paul Ashton and Duncan Waterson, *Sydney Takes Shape*, p 22-23.

<sup>8</sup> Frances Pollon, *The Book of Sydney Suburbs*, pp 213-215 and 257-258. The German word 'bad' is related to the English word 'bath'. See also Fitzgerald & Golder, pp 12, 13).

<sup>9</sup> Peter Bridges, *Foundations of Identity: Building Early Sydney, 1788-1822*, pp 68, 89; James Broadbent, *The Australian Colonial House*, pp 114-116, 261-63.

<sup>10</sup> Ashton & Waterson. The land was then owned by his son Edward Macarthur.

commission in Australia, pre-dating his appointment as Colonial Architect.<sup>11</sup> Harris, who had come as a surgeon with the New South Wales Corps, soon acquired more land, by grant and purchase, so that his Ultimo holding ultimately reached 233 acres, extending northwards along Blackwattle Swamp Creek and 'Blackwattle Swamp Cove' to adjoin Macarthur's Pyrmont.<sup>12</sup> Harris's property, 'the old rural Ultimo', included a deer park with 200 spotted deer.<sup>13</sup>

The Ultimo Estate was still not subdivided when Woolcott & Clarke's Map of the City of Sydney was published in 1854, at the height of the gold rush, although Sydney itself was burgeoning as a densely developed urban area.<sup>14</sup> Some of Harris's land was leased or unofficially developed by then but its formal subdivision did not start until 1859. Streets were surveyed and the land divided into 70 numbered blocks. In 1874 George Harris, the eldest of the Harris children, told a parliamentary enquiry that —

within the last seven years our family has laid out £20,000 in buildings and we have not a vacant house on the estate. Various works have been established in the neighbourhood, including the Atlas Iron Works, and the Castlemaine Brewery, which employ a large number of men.<sup>15</sup>

From then on the land was gradually developed and the suburb became a bustling melange of waterside industry, manufacturing, quarrying and housing. George Harris, once the mayor of Sydney, lived in Ultimo House until his death in 1897.

#### 4.2.3 Saunders on the peninsula

The location of the rented allotment where Charles Saunders began his first quarry is not known.<sup>16</sup> Nor is anything known about how he financed this project. However, he had sufficient resources by 1858 to move into a new hotel in Pyrmont.

The 'Publican's General License, for the House known by the Sign of The Quarrymans [sic] Arms' was issued to him on 4 May 1858.<sup>17</sup> The hotel, now conserved as a residence, is a two-storey building at the corner of John and Mount Streets — in an allotment of the Pyrmont Estate. It is a pleasingly simple building in the Victorian Regency style of architecture, marked by a faceted corner entrance, by parapets concealing the roof, and by a cantilevered balcony at first floor level along its two street frontages. Its stone walling is no longer evident, having been rendered over.

Christine Eslick and Emery Balint, in their article 'The Saunders: A success story'<sup>18</sup> observed that while a publican required a license from the earliest days of

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<sup>11</sup> James Broadbent, pp 87-88.

<sup>11</sup> A grant of 34 acres, 'Between the Church Land and the Ground used as a Brickfield, without the the Town of Sydney', was made to 'John Harris, Esq' on 26 March, 1800 (*Land Grants 1788-1809*, p 116. Blackwattle Swamp Cove was later resumed to form Wentworth Park.

<sup>12</sup> Marjorie Barnard, *A Histry of Australia*, p 74. See also Joy Hughes, ed, *Demolished Houses of Sydney*, p 10.

<sup>13</sup> Ashton & Waterson, *passim*.

<sup>14</sup> Michael R Matthews, *Pyrmont & Ultimo: a History*, p 14.

<sup>15</sup> The entry 'Robert Saunders, Esquire' in *Australian Men of Mark*, states only that this was in Pyrmont (not Ultimo) 'where the celebrated freestone quarries now are.'

<sup>16</sup> A copy of the License is in the Doreen Lanning collection.

<sup>17</sup> *Heritage Conservation News* (Heritage Council of NSW) 26 May 1990.

the colony, it was not until 1901 that the NSW Mines Act laid down the qualifications for a quarry operator!

Interestingly, one of the two sureties mentioned in the Publican's License was John Maidment. John Maidment and his sons Henry, Levi and Frederick were loyal Saunders employees for many years. It is also interesting that less than 20 years after the building of The Quarryman's Arms there were at least eleven pubs catering for Pymont's many quarrymen.<sup>19</sup>

It is difficult to piece together a narrative of Charles Saunders' activities in these early years because, unlike his businesslike son Robert, who succeeded him in the enterprise, he did not trouble to register his quarrying leases in the General Register of Deeds held in the Land Titles Office. But at this time the business seems to have been small. The annual *Sands Directory* for the years up to 1871 list him not as a quarryman but as the publican of the Quarrymans Arms, where the family lived. However he is recorded in the *Waugh and Cox's Directory* as a quarryman in 1855. In 1861, in a Sydney Municipal Council record, he was described as a contractor for roadworks in John Street from Harris Street to the western end. It appears that Saunders actually began the quarrying business from the pub and the family gave up the license in the early 1870s when the business was well established.<sup>20</sup>

The tougher quality of Pymont sandstone was becoming so well known that when the entrance and steps of the old Australian Museum had to be replaced in 1855, the Colonial Architect insisted that the stone must come from the 'best bed of the Pymont quarries.'<sup>21</sup> Other builders made the same choice and as Pymont also provided ballast for ships, roads and railways, between 130 and 140 loads of stone were being dragged each day into and through Sydney by bullock train along deteriorating roads.<sup>22</sup>

In 1860 Charles leased 'good quarrying land' from the Ultimo Estate, then in the hands of George Harris. This was Block 54, at the foot of Miller Street (the lower or west end).<sup>23</sup> From here he is understood to have supplied sandstone for the construction of Edmund Blackett's main buildings at the University of Sydney. It is likely that for the same architect he also provided the stone for the extension of St Mark's church in Darling Point and possibly other churches and buildings.<sup>24</sup>

In 1858, just as the first stage of the university was being completed, half of the 44 men listed as 'quarrymen' in *Sands Directory* lived in Pymont. In an 1868 letter home to Beansburn in Scotland, quarryman John Fulton quoted quarrymen's and masons' daily wages as ten shillings and labourers' wages as

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<sup>19</sup> Fitzgerald & Golder, p 55.

<sup>20</sup> Matthews, p 22, claims that Charles Saunders retired to the Quarrymans Arms towards the end of his life, but other records contradict this. Later a pub with a similar name was built on another site. *Waugh and Cox's Directory, 1855*, 'Trades &c directory: Quarrymen'. The reference to Charles Saunders as a contractor is in the City of Sydney Archives Record Item 65/0231, 28 January 1861.

<sup>21</sup> Fitzgerald & Golder, p 32, citing Barnet to Colonial Architect, 14 April 1855, in 'Colonial Architect, correspondence re Australian Museum', Archives Office of NSW, 2/576.

<sup>22</sup> Fitzgerald & Golder, p 33.

<sup>23</sup> *General Register of Deeds*, Book 178, Nos 578-79, Land Titles Office.

<sup>24</sup> Evidence for Saunders' connection with these is scant, but they were some of the many buildings of Pymont stone that were under construction in these years. See Fitzgerald & Golder, op cit, p 33 et seq; see also Graham Jahn, *Sydney Architecture*, pp 35, 37.

seven to eight shillings. He also stated that he belonged to a Quarrymens' Society formed to protect their interests.<sup>25</sup> A Saunders family tradition is that two members of Charles' father-in-law's family, John and Levi Morgan, came to Pymont where they worked as quarrymen and became foremen in Saunders' quarries.<sup>26</sup>

From this time there was an increasing demand for Pymont yellowblock stone as building activity, both private and public, surged in the prosperous years that followed the gold rush. James Barnet, who was NSW Colonial Architect from 1862 until 1890, was responsible for a marvellous campaign of government building. By then it was clear that Pymont yellowblock sandstone was of the highest quality, uniform in hardness, texture and colour. As a 'freestone', it was also found to be eminently suitable for fine carving, which perfectly suited the traditional building detailing of that period. For example, starting in 1890, William Priestly MacIntosh carved ten of the explorers' statues for the niches of the Lands Department Building, in what was described as 'Pymont Freestone', a material which proved extremely durable.<sup>27</sup> Richard Baker, of the Museum of Applied Arts and Sciences, later wrote that 'it yields readily to the artistic fancy of the sculptor.'<sup>28</sup>

Barnet designed Sydney's new General Post Office at the corner of George and Pitt Streets. Building of the George Street portion commenced at the end of 1866, the main contracts being awarded to John Young. Young had migrated to Melbourne after working on the Crystal Palace in London and then moved to Sydney, where he set up as a building contractor in 1866.<sup>29</sup> For the masonry of the GPO (of which more will be said later) Young opened a quarry between Fig and Quarry Streets, Pymont, where the Winchcombe & Carson woolstore was later built. But the scheme to supply his own building stone evidently failed and he made a successful arrangement with Charles Saunders, who was already working nearby, to take it over, 'cranes and all'. The quarry was eventually worked out and the hole gradually filled in with rubbish and ashes and then levelled. A little fiery phenomenon at the site was the subject of a newspaper report not long afterwards—

The 'burning rock' is, or was, one of the wonders of Pymont. It was first discovered about November, 1888, by some workmen who made a fire for the purpose of boiling a 'billy' of water, at the foot of an old unused quarry known as 'Hellhole', which faces Wentworth Park, and is in close proximity to the residence of Mr John Harris, the Mayor of Sydney. The gas was coming out of a fissure in the face of the sandstone rock, and attracted great attention and diversity of opinion as to its origin for a considerable time. Visitors from the country, and from the neighbouring colonies, almost invariably came to see what appeared to be an utterly inexplicable phenomenon. Ultimately the matter was accounted for beyond the possibility of a doubt by truant school-boys, who, instead of devoting their time to educational training, preferred to spend school fees in wax matches for the purpose of investigating the mystery of the burning rock. The excavated portion of the quarry had been refilled with rubbish, consisting, to some extent, of vegetable matter and dead animals, which decayed in time, and formed the gas that found its only means of escape alongside of the rock, where the soil was looser than elsewhere. The boys dug holes about two feet, and inserted iron pipes therein, around which they refilled the soil, taking care to prevent the bottom of

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<sup>25</sup> Eslick and Balint.

<sup>26</sup> Notes in the Doreen Lanning collection.

<sup>27</sup> Beverley Earnshaw, *An Australian Sculptor: William Priestly MacIntosh*, p 28.

<sup>28</sup> R T Baker, *Building and Ornamental Stones of Australia*, p 15.

<sup>29</sup> Emery Balint, Trevor Howells, Victoria Smyth, *Warehouses & Woolstores of Victorian Sydney*, p 40.

the pipes from becoming choked to enable ventilation of the foul air in sufficient quantity to ignite, when a light was applied to the top of the pipes. Mr Slee, a Government Inspector of Mines, and other geologists, examined the spot, and confirmed the fact that the gas was from the refilled portion of the quarry, and not from the solid rock. Then the alarmed tenants of the houses in the vicinity, who had removed themselves and their household goods, fearing an earthquake or some such catastrophe, thus reassured, returned to their former residences. The mystery of the ‘burning rock’ was solved.<sup>30</sup>

Examples of James Barnet’s Sydney projects in these years include the monumental extension to the Australian Museum in College Street (completed 1866) and Redfern Mortuary Station (begun 1868). The carvings which decorate the western and northern facades of the GPO (from 1882) are especially notable as fine examples of the designer’s art and the craftsman’s skill. Its later carvings are realistic portrayals of the ways the postal service served colonial society.<sup>31</sup>

In the early 1870s, Charles and Emily and their family left the Quarrymans Arms and moved into their residence ‘Clifton Villa’ in Harris Street, a little north of Miller Street, on another allotment of the Pyrmont Estate.<sup>32</sup> The vacated pub remained in the Saunders ownership, the licensee being Joseph Holland.<sup>33</sup> ‘Clifton Villa’ stood on a high rock outcrop and was reached by stone steps from Harris Street. From Mount Street at the rear there was a carriage entrance. From the front verandah of the house there were fine views eastwards across Darling Harbour, where sailing ships were moored around the waterfront of Pyrmont Bay. Charles Saunders died there in 1893 and his widow lived there until she also passed away. In 1916 the property was bought by the Colonial Sugar Refinery; the home was demolished and the site became a car park.

Saunders donated part of his land, on the lower level facing Harris Street, for the building of a small Primitive Methodist chapel in 1876. It continued as a church until 1922.<sup>34</sup> The building survives today as a simple brick Free Gothic structure, which is now the premises of The Pyrmont Maybanke Kindergarten.

### **4.3 The Boom Time**

#### **4.3.1 Robert Saunders**

When Saunders’ son Robert (1846-1922) completed his schooling at Sydney Grammar he was taken on as a partner, and within a few years had bought out his father. Robert Saunders’s contribution to the family business is somewhat better recorded. Documents such as leases, maps and published sources illustrate many of his projects. He was responsible for the geographical expansion and technological advances evident in the Saunders business after 1880.<sup>35</sup>

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<sup>30</sup> The *Illustrated Sydney News*, 23 July 1889.

<sup>31</sup> Peter Bridges & Don McDonald, *James Barnet, Colonial Architect* (Hale Ironmonger, 1988) p 68 et seq. The subjects of the later carvings by Tomaso Sani in the Pitt Street extension of the building became very controversial.

<sup>32</sup> The residence was called ‘Clifton House’ in some issues of *Sands Directory*.

<sup>33</sup> City of Sydney Archives, Record Items 65/1543, 6 April 1880; 65/1503, 15 March 1881; 65/1922, 7 February 1888.

<sup>34</sup> Matthews, p 43; Fitzgerald & Golder, p 55.

<sup>35</sup> Examination of MacDonald and Saunders, in *Perpetual Trustee Co v Municipal Council of Sydney*, CRS 56/327, cited in Fitzgerald & Golder. Much of the material in this phase of the history comes from the account of this case.

Robert married Amy Cooper, and they eventually had nine children—seven daughters and two sons. Their firstborn son was named Robert and he was eventually to follow his father into the sandstone business. The family lived in the Saunders-built Amy Terrace, in Abattoirs Road (later Gipps Crescent, now Bank Street), next door to the Half Way House hotel, which was also erected by Saunders.<sup>36</sup> It is touching that he named the terrace of nine houses after his wife.

There were other quarries on the peninsula. As early as 1858 there were 22 quarrymen listed in Sands Directory. Later, other quarrying families such as the Earnshaws also prospered.<sup>37</sup> John MacDonald, William Fulton and John Kennedy were among the independent operators. Others were Doyle, Crossland, Erwin and Pearce. An important family was the McCredie Brothers, whose quarrying operations however were secondary to their work as building contractors.<sup>38</sup> The Saunders operation was pre-eminent, partly because Charles Saunders acted as a kind of agent for the Harris family, who still owned most of the Ultimo Estate. His advice was sought in deciding who should get permission to quarry and where they could work.<sup>39</sup>

#### 4.3.2 The quarries in operation

But it was Robert Saunders who built upon the advantage of business contacts such as these by investing in more land and, more importantly, by employing new equipment. He adopted mechanical quarrying and stone working and was the first Sydney quarry owner to use steam power for drilling, sawing and planing the stone. Four of the best steam cranes, with ropes of wire rather than heavy chains and hemp, were brought in for lifting stone blocks, as were several smaller hand cranes, replacing what Saunders described as ‘the old style of gallows cranes’ (presumably so named for their resemblance to a gallows).

The *Town and Country Journal* of 8 December 1883 carried an illustrated report of the working of the Robert Saunders quarry located east of what is now Wattle Street, north of Fig Street. The journalist wrote —

His operations are carried on at three different quarries of Pyrmont and Ultimo. Some of the works have been in operation more than 30 years; others have been opened by Mr Saunders during the last five or six years. At the present time he employs over 100 men, and some 50 horses, amongst them being the remarkably fine teams of powerful mottled greys (stallions) seen drawing the immense blocks of brown stone used in the General Post-office, and other buildings now in the course of erection.

The quarries face Glebe Bay [Blackwattle Bay], in Sydney Harbour . . . There the face of the quarries varies from 40 ft to 60 ft in depth, and there are immense stretches of it in which the solid rich brown stone occupies the whole face. To facilitate the work, Mr Saunders has gone downwards from 16 ft to 20 ft deeper than the quarries were formerly worked, until the rock-bed is reached. And now, by the aid of the huge blasts of powder, put in from the top right down to the bottom of the layer of freestone rock, the whole mass is shifted or rent apart, and made available for cutting into any sized blocks that may be required.

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<sup>36</sup> *Australian Men of Mark*, p 233. The footprints of the hotel and ‘Amy Terrace’ are included in the Water Board’s Metropolitan Detail Series, City of Sydney, Sheet G3. The pub was demolished to make way for the approach to the Anzac Bridge.

<sup>37</sup> *Building* magazine; Eslick and Balint.

<sup>38</sup> Fitzgerald and Golder, *op cit*, *passim*; see also *the History of the GPO: the City’s Centrepiece*, p 34 et seq.

<sup>39</sup> Examination of Robert Saunders, in CRS 56/327, cited in Fitzgerald & Golder.

The newer portions [of the quarry] . . . were first commenced many years since; but steam was not the effective agent that it is now. After taking off a portion of the softer top stone, the quarry was abandoned, and remained in that state some 20 years. But Mr Saunders saw that there was grand stone under the top layers, and though Messrs. Harris had determined not to re-open the ground, they made an exception in this case, and the splendid quality of the stone, and the effective manner in which it is worked, show that they adopted a course which is decorating Sydney, and many other parts of the country with buildings of the most substantial character.

In order to shift such huge masses, Mr Saunders brings in the aid of steam very freely. He has, in these quarries, seven steam cranes, and about 20 other cranes, several of them lifting from 20 to 25 tons at a time. Waggons of proportionate strength are used for carrying the blocks, and they are drawn by the grand teams already mentioned. At Johnston's Bay, not far from the quarries, a stone wharf, 400 ft in length, has been erected into deep water, and there stone is shipped for various ports of Australia, and in such blocks as may be required. There are three cranes on this wharf.

Saunders also erected a large workshop, 'of handsome elevation', where quarried blocks could be worked through the various finishing stages ready for building site erection. Its footprint is shown as 'Saunders Stone Works' on the City of Sydney Metropolitan Detail Plan, Sheet M3, of 1888.<sup>40</sup> The building had a nave-like centre bay, flanked by shorter aisle bays. It was described and illustrated in the same *Town and Country Journal* account —

It is roofed with iron, and is 180 ft in length by 72 ft wide. A travelling crane overhead moves the huge masses of stone about as may be required. Motive power is got from an 18 h.p. condensing engine, made specially for the work by Messrs. Fowler, England. The boiler and gearing are all of steel, and though considerable strain is put on the engine while the planing machines are at work, the whole goes on with quietness and ease that are remarkable. Indeed the whole of the work is conducted with the system, skill, and care which prove there is a thoroughly competent man at the head of affairs . . . The property, it may be added, is worked under lease from Messrs. Harris.

The *Journal* went on to describe some of the machinery that operated in the workshop —

The stone sawing and planing machines . . . are a comparatively new development of the stone trade in this colony. The saw cuts into any sized slices blocks of stone up to 11 ft in length and 4 ft by 5 ft 6 in in depth and width. The sawing machines are by John McDowall, of Johnstone, Scotland. The saws are powerful blades of iron, 4 in by 1/2 in, carried backwards and forwards in a strong frame, moved by steam power. Water and sand are used as cutting agents under the blades. The sand is imported, and is a hard flint-like substance. Water drips from pipes upon the stone as the cutting goes on. The work is done rapidly, and there is no waste, as the case is when stone has to be chiseled out of the block. By this means, flagging for verandahs and paving, and for various other purposes is got out with much facility, and at rates of cost which bring it below the price of concrete work.

The [five] planing machines are by Coulter, Harpin, & Co., the agent here for whom is Mr Charles Dobson. These machines deal with stones any size, to 10 ft long by 5 ft wide and 2 ft 6 in deep. They plane one or more faces of the stone, bevel, and mould them in various forms, and with the necessary precision for such work as sills, landings, steps, and other work. The cutting tools operate on hard as well as soft stone; indeed the stones going through at the time of our visit, and being turned out as handsomely moulded steps, are so hard and tough that men did not care to tackle them with ordinary hand tools.

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<sup>40</sup> Mitchell Library. The series of maps was produced by the Surveyor-General's Office.

As well as these big machines, which minimised the waste of time and material, there was a host of smaller tools and gear and in this period, as is implied in the reportage, various harder stones from quarries outside Sydney, including marble and trachyte, were also brought in for working and finishing. No other quarrymen were as up-to-date. The new machines also meant that many of the blocks could actually be finished at the works, ready to be sent to building sites.<sup>41</sup>

Another eye-witness description of the quarrying operation was given by a later member of the Saunders family —

There was the large quarry face where the stone was cut out by drilling along the back and sides of the stone with guttering machines and then wedges were inserted into the base of the block and sledge-hammered in one at a time until the bed gave. The block was then removed with steam cranes, broken into smaller blocks and then to the dressing sheds for working into their ultimate shapes and sizes. In the dressing shed . . . the masons would take over and complete the final dimensioning, shaping and finishing.

The men used to arrive early as a bell rang for breakfast break. In the office they had the old fashioned entry books with a clerk sitting on a high stool at a sloping desk, making the entries.<sup>42</sup>

Incidentally, it is worth remembering that the deadly effects of inhaling the fine stone powder generated by such machines as these, particularly inside a building, were not yet recognised. Many years later a Silicosis Committee was formed and in about 1925<sup>43</sup> the younger Robert Saunders was a member.

#### 4.3.3 Purgatory, Paradise and Hell Hole

The three main Saunders quarry sites were described by Robert Saunders in 1917.<sup>44</sup> Each produced stone with distinctive characteristics, which made it possible for sandstone capable of fulfilling particular building functions to be provided. The three were said to have been nicknamed by Scottish workmen.<sup>45</sup>

The quarry called ‘Hell Hole’ was located near the one referred to earlier which had been opened by John Young and taken over by Charles Saunders, just north-east of Wentworth Park. The big Winchcombe & Carson woolstore was to be built there in 1890. ‘Hell Hole’ got its name from its formation as a deep excavation, made necessary here to get to the bottom of the main stone bank.

This went down some 20 feet below the street level and with every heavy rain it filled up. Although first class pumps were installed, which were many times assisted by the Fire Brigades’ first steam pumping engine, it would still take weeks to empty. Saunders said that

The little lake so formed was a source of attraction for bathers, generally on Saturdays and Sundays, the boys would have great fun in the water, on scaffold planks, and there would be great sport racing across, no fence or barricade would keep them out, and though warned so often of the dangerous parts, the boys, and very big boys too, would be somewhat fascinated by the danger spots and take sometimes fatal risks.<sup>46</sup>

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<sup>41</sup> Fitzgerald & Golder, p 52.

<sup>42</sup> Matthews, p 24.

<sup>43</sup> Information in the Doreen Lanning collection.

<sup>44</sup> *Building* magazine.

<sup>45</sup> Information from the Doreen Lanning collection.

<sup>46</sup> *Building* magazine.

‘Hell Hole’, as reported in the account of the ‘burning rock’ given earlier, had been worked out and at least partly filled in by 1888.

‘Purgatory’ was adjacent to Hell Hole and just to its north, extending as far as Pymont Bridge Road. Saunders said that it was situated near an old volcanic dyke. Here the stone was found to be very hard and not liable to fracture with extreme changes of heat and cold. It was highly recommended for templates, girder stones and for places where great strength was required. The stone louvres of the main tower of St Mary’s Cathedral were tooled from ‘Purgatory’ stone, and the stone for the loadbearing facade of the Burns, Philp Building in Bridge Street, Sydney also came from there.<sup>47</sup> This quarry was also worked out and progressively filled in from the late 1890s. Some of the material used in the filling came from the basement excavations being made for the Queen Victoria Markets (the present QVB).<sup>48</sup> An indication of the large scale of these quarries is given in some of the evidence in court actions brought against some of the contractors who were dumping refuse, including garbage from other council areas, in the quarry holes. The face of one quarry cut was described as being 77 feet (23 m) from top to bottom.<sup>49</sup>

‘Paradise’, also called ‘Half Way’, was a little less than a kilometre north of ‘Hell Hole’. It seems that this site was Charles’s re-activated old lease at the foot of Miller Street. It was the last of the Saunders quarries and the only one still working when Robert Saunders reported these descriptions in 1917.<sup>50</sup> At that time it had extended northwards as far as John Street (to what is now called the Saunders Street Cliff Face) and was yielding considerable quantities of the hardest and very best stone. The quarry might well have got its alternative name from the Half Way House Hotel, which was situated on the triangular site at the bottom of Miller Street, at the corner of Abattoirs Road (later known as Gipps Crescent and now Bank Street, under the Western Distributor flyover).

As well as what were described as extensive harbour works, Saunders contracted for supplying and laying stone flagging, kerbing and guttering for streets in Sydney. Some was trachyte, which came from the quarry in Bowral.<sup>51</sup> The firm also provided sandstone for the original Fisher Library at the University of Sydney (now McLaurin Hall), St Mary’s Cathedral and many other buildings of this Boom period. It is interesting that in 1999, when the twin spires of St

Mary’s were added to complete the building, yellowblock sandstone was not readily available and so artificially coloured Wondabyne stone was used instead.<sup>52</sup>

Saunders sent Pymont yellowblock stone to many exhibitions. His samples took first prize at the Melbourne and International Exhibitions of 1880 and 1888; at Amsterdam in 1883; at the Colonial and Indian Exhibition in 1886; and at Chicago in 1893. Saunders stone could now be seen in Sydney city and suburbs, in country areas, in every capital city and in New Zealand, Suva and

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<sup>47</sup> Debby Cramer, ‘Shaping the Stone’, in Gary Deirmendjian, *Sydney Sandstone*, p 117. The Burns Philp Building was designed in the mid-1890s by McCredie & Anderson, architects.

<sup>48</sup> Sydney City Council Archives: ‘Perpetual Trustee Co Pty Ltd v Sydney Municipal Council’, December 1896, CRS 56/317.

<sup>49</sup> Sydney City Council Archives: ‘Perpetual Trustee Co Pty Ltd v Sydney Municipal Council’.  
<sup>50</sup> *Building* magazine.

<sup>51</sup> Search of the City of Sydney Archives for 1880, 1888, 1894 and 1900, and of *Bowral Free Press* issues of 1894, in the Doreen Lanning collection.

<sup>52</sup> Information from the Centenary Stonework Program.

Vancouver.<sup>53</sup>

In 1884 Robert Saunders purchased a portion of the original New South Wales Art Gallery building which had been erected in the grounds of the Garden Palace for the International Exhibition in 1879, and moved it to his lease, Block 62A of the Ultimo Estate, in Miller Street,<sup>54</sup> where he had it converted for use as a stables building. The Art Gallery was a distinctive ‘temporary’ timber structure, having three lantern-roofed bays. It was designed by the architect William Wardell (architect for St Mary’s Cathedral) and erected by the same eminent builder, John Young, who was contractor for the GPO.<sup>55</sup> As befits an art gallery, the building was well lit and ventilated; and after re-location, when it was given a stone paved floor, Saunders proudly described it as one of the best stables in the city.

In those pre-automobile times the housing and training of horses were very important parts of the business. The Saunders stable included 20 or 30 young colts.<sup>56</sup> Only a generation ago, older Pymont residents could remember the days when big Clydesdales drew the sandstone blocks along Harris Street to city building sites. Coming home, the horses, so used to the journey, were able to find their way along the streets and to their stables on their own.<sup>57</sup>

The Saunders family acquired more land in Pymont and the firm built almost 50 cottages for workmen, mostly in terraces, including Amy Terrace in Abattoirs Road and others in John and Jones Streets. Most of these have now gone. The fine block of three-storey sandstone shops with dwellings above, erected about 1877 at the corner of Harris and Miller Streets, was also a Saunders building. It is sometimes called Saunders Terrace. The corner occupancy was formerly a bank. For projects like these Saunders set up as an independent builder and contractor and his letterheads began to read ‘Robert Saunders, Quarry Master & Contractor’.

A characteristic lease is one dated 31 May 1889, from the family of John Harris to Charles and Robert Saunders. This was for Block 63A of the Ultimo Estate, adjacent to the ‘Paradise’ quarry. The term was to be 50 years and the annual rental £300. The site was described, in legal language difficult to relate to the present street pattern, as

commencing at the intersection of John Street with Jones Street and bounded on the North East by said Jones Street bearing South Easterly One hundred and ninety eight feet on the South East by the North West boundary of Block sixty three B bearing South Westerly and parallel with John Street to Hill Street on the South by that Street bearing Westerly to John Street and on the North West by that Street bearing North Easterly to the point of commencement.<sup>58</sup>

One notable project indicates that the firm was able to handle large contracts speedily and well. This was the excavation, quarrying and removal of the whole of what had been the Darling Island hill, formerly the site of the Australasian Steam Navigation Company’s works since the 1850s. When the ASN Company

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<sup>53</sup> *Building* magazine.

<sup>54</sup> The footprint of the stables is shown on the Water Board’s Metropolitan Detail Series Sheet B3, City of Sydney. The site is now No 62 Miller Street.

<sup>55</sup> Dr Peter Reynolds kindly allowed the use of material from his PhD Thesis on the history of the NSW Government Architect’s Branch containing information including ‘Parliamentary Votes and Proceedings, Legislative Assembly, 1884’, Q 3, 7/8/1884.

<sup>56</sup> *Building* magazine.

<sup>57</sup> Information from Mrs Jessica Beck of Melbourne, descendant of Charles Saunders.

<sup>58</sup> Indenture No 1000, Book 414, Land Titles Office.

failed in the mid-1880s the island was sold to a syndicate who saw its potential as a centre for the shipment of wool and frozen meat. They planned to build warehouses with facilities for wool storage and for slaughtering and freezing meat. In the event only the quarrying work was completed before the syndicate sold Darling Island to the government in 1889. Robert Saunders won the contract, worth about £30,000. The contract time was two years, but within twelve months the Saunders firm had it all levelled and the best of the stone taken out and squared for the construction of the sea wall on the west side.<sup>59</sup>

A good deal of interest has surrounded some of the large blocks of stone brought out of the Saunders quarries. One, recalled much later by Robert Saunders, was the main arch stone in the George Street front of the first stage of the GPO building. This weighed over 25 tonnes. A special waggon was built to transport it to the building site and 26 horses were employed to haul it. Before it left Harris Street, an axle bent under the great weight. While the waggon was being repaired the stone, still in its quarried state, was roughly dressed by masons to make it lighter and it was lifted by screw jacks on to the waggon and delivered without further trouble. The stone was set in the building by Albert, the visiting Duke of Edinburgh, in April 1869. The lengthy account in the *Sydney Morning Herald* of 2 April 1869 is one of the earliest documentary references to the work of Charles Saunders. It is interesting enough to quote part of it —

Mr Young [the builder, who was in the official party] then ordered the ponderous keystone to be lowered, and the massive block having been specially adjusted, his Royal Highness thereupon laid the stone with the trowel and mallet handed to him by the Minister for Works . . .

The stone laid by the Prince forms the keystone, archivolt, and two spandrels of the central archway of the George-street front. Upon the face are to be carved the Royal arms, and upon the coffered soffits the arms of the Duke. The dimensions of the stone are:— length 13 feet 6 inches, width 4 feet 6 inches, and height 6 feet 6 inches — the whole being equal to 394 cubic feet. The weight is twenty-six tons. This stone is doubtless the largest yet laid by his Royal Highness, and it is probably the largest block of sandstone he will ever lay, for it would be difficult, if not, indeed, impossible to get *sound* blocks of sandstone of equal size from any quarry in England, or elsewhere. Few cities are so favourably situated for sandstone as Sydney, for in almost every direction blocks of this description of freestone may be obtained of almost unlimited dimensions, and without a flaw. The most casual observer of the new Post Office cannot fail to notice the massiveness of the stones used in the building, and the solidity of the structure is unequalled by any other erection in the city.

The contractor has placed very powerful cranes in his quarries at Pymont, whence these immense blocks of stone are obtained, and great credit is due to Mr. C. Saunders for the workmanlike manner in which these blocks — far exceeding in size anything previously attempted in the colony — have been quarried. The difficulty of removing these heavy blocks of stone must be very considerable . . .

In hoisting and fixing these large stones “travellers” are used, which can move longitudinally and crossways; and as the lift is directly over the stone to be fixed, there is less liability of accident than by the use of cranes or other contrivances.

The second portion of the GPO was erected by the McCredie Brothers, using Pymont sandstone from their quarry.

Stones such as the GPO keystone pale into insignificance in comparison to the mammoth block which was the subject of a much later event, reported in a

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<sup>59</sup> *Building* magazine. The date is given in Eslick and Balint; NSW Parliamentary Debates, series 1, vol 37, 1889, pp 959-60.

newspaper item in 1927, during the last phase of the Saunders operations. The report was headlined as ‘A remarkable rock cutting achievement’ and a photograph was captioned thus:-

A stone that would have been an ornament to the builders of the Pyramids and the architects of Stonehenge. It weighs approximately 500 tons [508 tonnes] and measures 36 feet [11 m] long, 11 feet [3.5 m] high and 15 feet [4.5 m] wide. It was cut and wedged from Saunders’ quarries at Pymont.<sup>60</sup>

This gargantuan monolith would of course have been split or sawn into smaller blocks so that it could be conveyed to the workshop for further working.

The great depression of the 1890s affected almost every community activity, especially the building industry. There were fewer of those great public works that had kept builders so busy in the previous two decades. One of the very few large projects still under way during the years of financial stringency was the Queen Victoria Markets, which was being built from 1893 to 1898 and faced with Pymont stone. There were other factors affecting building as well, including the great improvement in the manufacture and quality of bricks. Another was changing attitudes and styles, as the country moved towards federation. The new Government Architect, Walter Liberty Vernon,<sup>61</sup> was constrained to cut building costs in response to these post-depression forces. When he designed buildings using sandstone, it did not always come from Pymont. For instance the west wing of the Public Library (now the Mitchell), completed in 1909, used stone from Maroubra.

The depression and other factors compounded the increasing difficulty of getting stone from Pymont, where not only were quarries being worked out and filled as refuse tips, but those that survived suffered the problems of cutting stone from greater depths than before. The combination of slowing demand and technical difficulties seems to have squeezed many firms, even long-established ones like Fulton’s, which was out of business in the 1890s. By 1900 there were only two Pymont quarrymasters listed in *Sands Directory* — Robert Saunders and Nicholas Ryan, who was working on John Street. Ryan’s disappeared after 1900 and the Saunders quarries were the only ones left. They were operating in two areas — ‘Paradise’, around Miller Street and Abattoirs Road (now Bank Street), and ‘Purgatory’ off Wattle and Fig Streets, north of the old ‘Hell Hole’.

#### **4.4 Into the 20th Century**

In about 1908 Robert Saunders Junior (1879-1956) joined the firm after completing his studies in architecture. By 1913 he was a partner and the firm

became Robert Saunders & Son. It continued thus for another 14 years. Saunders had been confident enough to take out a new quarrying lease on Block 50 of the Ultimo Estate, in 1898.<sup>62</sup> But the scale of his operations began to contract somewhat. He was also operating a quarry at Bowral, from which he supplied the piece of dark-coloured trachyte which was laid as the foundation stone of the new Central Railway Station in 1902.<sup>63</sup>

Central Station was a huge project that ‘featured the use of Sandstone on all

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<sup>60</sup> Sydney Sun, 14 September 1927.

<sup>61</sup> Vernon’s predecessor James Barnet was the last to hold the office of Colonial Architect.

<sup>62</sup> General Register of Deeds, Land Titles Office, Book 628, No 584.

<sup>63</sup> General Register of Deeds, LTO, Book 442, No 93; Sydney Morning Herald, 1 May 1902.

publicly-evident surfaces.’<sup>64</sup> None of the sources consulted specifies that Saunders was the supplier, but they do refer to ‘Pymont sandstone’ and his name was now synonymous with that material. And he was evidently present at the stone-laying ceremony.<sup>65</sup>

There is more precise information about the building of Sydney University’s first Fisher Library, in the years 1902-09. The Government Architect, Walter Liberty Vernon, specified the ‘basement storey in hard Purgatory stone, and the upper portions in the best Pymont, for which Sydney is famous.’<sup>66</sup>

Yellowblock was used in the decorative elements of the brick-built Pymont Fire Station, completed in 1907 to Vernon’s design, Darlinghurst Fire Station, also by Vernon, which was finished in 1912, and in many other brick buildings. In the next decade building also continued at Central Railway Station which, with its landmark sandstone clock tower, was not completed until 1920.

Robert Saunders was disposing of redundant land in Pymont by the 1900s. In 1906 Sydney City Council took over the land at the corner of Wattle and Fig Street, formerly the location of the stone workshop where the Saunders family had been operating for many years and near the Winchcombe & Carson woolstore, where the ‘Hell Hole’ quarry had been. The site, still open, is the Council’s present-day Wattle Street depot.

All this suggests that while the use of building stone was generally diminishing in comparison to other materials, Pymont yellowblock was still in demand and Saunders’ quarries were not facing a collapse. On the contrary, when the state abattoirs moved from Glebe Island to Homebush, the firm was involved in levelling Glebe Island for new wharf development.<sup>67</sup> According to the Sydney Harbour Trust Report for 1915-16 ‘the quarry turned out 50,500 cubic yards solid, of ballast, of which 42,500 cubic yards were dumped at the eastern end for the future wharf, and 25,144 cubic feet of dimension stone were cut and sent away to various works.’<sup>68</sup> By 1920 approximately 250 men were working the Glebe Island quarries.<sup>69</sup> The reports of the Sydney Harbor Trust Commissioners in which these figures appear do not make it clear whether all these men were working for Saunders.

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<sup>64</sup> *Sydney Central Station and Railway Yard: Conservation and Management Study*, prepared by Howard Tanner and Associates for the State Rail Authority of NSW, 1987, p 51.

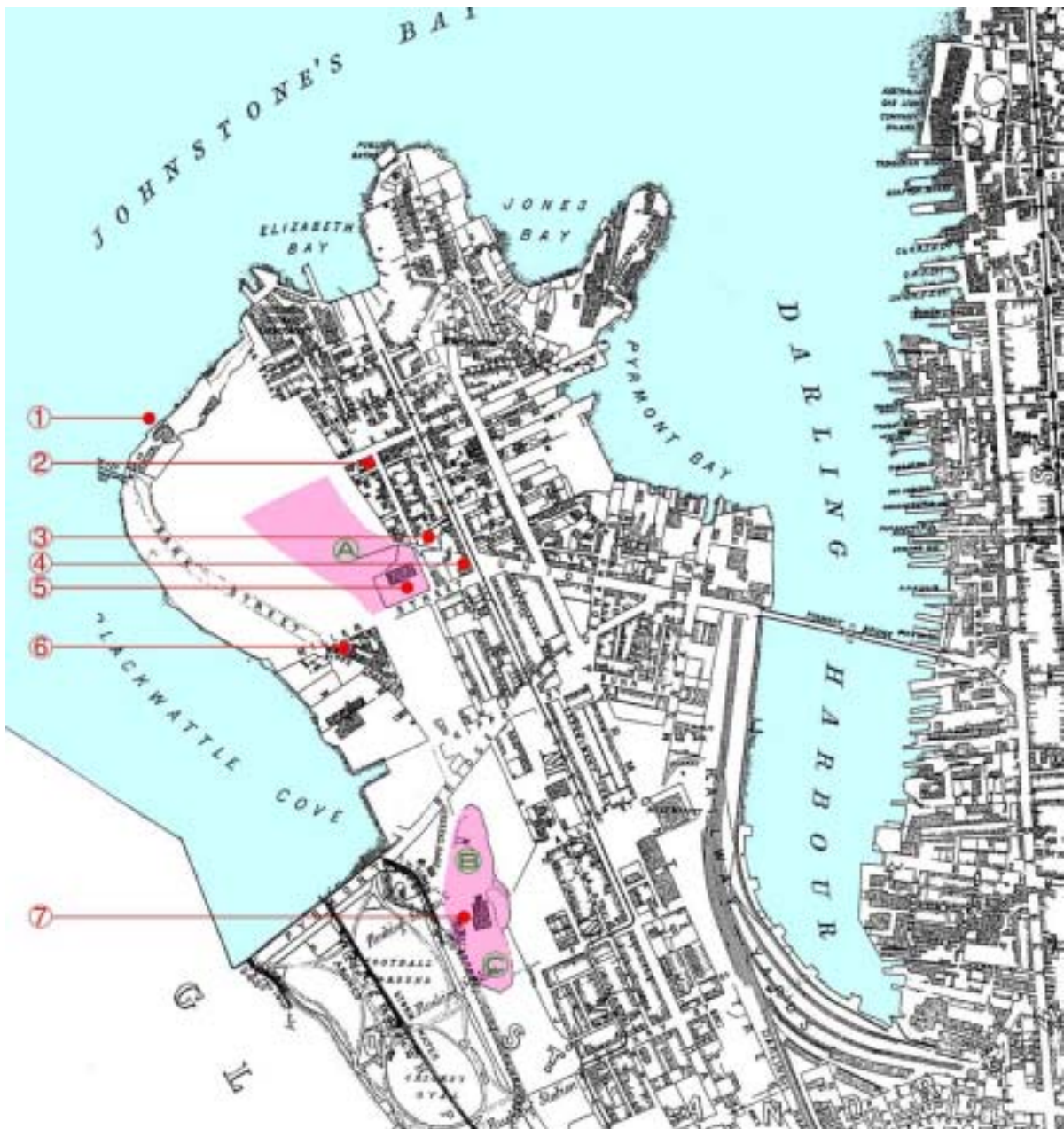
<sup>65</sup> Sue Rosen, *Yellow Block Sandstone Quarrying on the Pymont-Ultimo Peninsula*.

<sup>66</sup> W L Vernon, ‘The Fisher Library’, in *Building Magazine*, 12 September 1909, p 51.

<sup>67</sup> Fitzgerald and Golder, p 53.

<sup>68</sup> Report of the Sydney Harbor Trust Commissioners, 1915-16, in *NSW Parliamentary Papers, 1916*, vol 1, p 722, cited in Sue Rosen.

<sup>69</sup> Report of the Sydney Harbor Trust Commissioners, 1919-20, in *NSW Parliamentary Papers, 1920*, vol 1, p 1225, cited in Sue Rosen.



*A detail of the Map of the City of Sydney produced by the NSW Department of Lands in 1888. Some sites with Saunders associations have been identified. They are — 1: Location of Saunders Wharf. 2: The Quarryman's Arms hotel. 3: 'Clifton Villa'. 4: 'Saunders Terrace'. 5: Stables. 6: The Half Way House Hotel and Amy Terrace. 7: The stone workshop. The quarries are shown to their approximate extent at that time — A: Paradise. B: Purgatory. C: Hell Hole.*

(Link to a zoomable version [<HERE>](#))

It is not known what role, if any, Robert Saunders played in other public works of this period, such as the goods railway cutting and the remodelling of Jones Bay wharfage, which were remaking the Pyrmont landscape.

The elder Robert Saunders died in January 1922 at his home ‘Devoncliffe’ in Lang Road, Centennial Park, at the age of 75 years. He and Robert Junior had gone on investing in improved technology so that their quarries continued to have the capacity to cut huge blocks of sandstone. But in the age of steel and reinforced concrete there was less demand for building stone. Nevertheless many of Sydney’s large framed buildings, such as Challis House, Martin Place, were clad in Saunders yellowblock. And the firm also advertised regularly in *Building* magazine.

The quarries came into their own again as important nineteenth-century buildings like St Mary’s Cathedral and some at Sydney University were restored or extended. One of the last major undertakings of the firm under the control of Robert Saunders the younger was the supply of yellowblock stone for the towers and spires of St Paul’s Cathedral in Melbourne in 1927. Originally designed in 1878 by the English architect William Butterfield and built in a polytexture of Waurn Ponds and Barrabool sandstone, the project continued under the supervision of Melbourne architects Reed & Barnes. But the cathedral remained incomplete until the spires were added, to the design of James Barr, a Sydney architect, who specified Pyrmont stone. Typical cut stone blocks weighed 4 cwt [203 kilograms].<sup>70</sup>

Richard Baker’s well-known work *Building and Ornamental Stones of Australia* was published in 1915. In his discussion of sandstone, Baker wrote

Of all the states, New South Wales is especially favoured . . . for in the neighbourhood of Sydney itself and extending away to the Blue Mountains . . . is obtained the finest building sandstone of the whole continent. Its quality is such that it is imported into all the States, and figures largely in architectural work in all the capitals and large towns, being a great favourite with the stonemason and architect.<sup>71</sup>

Also included in Baker’s book is an extensive list of important buildings in which Sydney sandstone was the principal material. The list included —

The Pyrmont offices of the Colonial Sugar Refinery;  
the buildings of Sydney University, including the main quadrangle, the medical school and Fisher Library;  
Sydney Town Hall;  
the Lands Department, including the statues in the niches;  
the GPO;  
the Great Synagogue;  
the Art Gallery;  
St Andrew’s and St Mary’s Cathedrals;  
the Customs House;  
the Registrar-General’s office;  
the colonnade at Newington College, including its Waratah capitals; and  
the Bank of Adelaide, South Australia.

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<sup>70</sup> Melbourne *Sun*, 1927. a cutting in the Doreen Lanning collection; Philip Goad, *Melbourne Architecture* (Watermark Press, 1999), p 51.

<sup>71</sup> Baker, *Building and Ornamental Stones of Australia*, p 99.

From other sources it is known that Pymont sandstone was used in the external facings of St John's Cathedral (1909-11), the front of the E S & A Bank (1913) and the Union Bank (1916), all in Brisbane.<sup>72</sup>

Baker also published some of the results of crushing strength and fire resistance tests carried out by himself and James Nangle, superintendent of the Technical Education Branch. The tests were carried out on small cut cubes of stone subjected to compressive forces. Pymont sandstone sustained an impressive maximum of 2.57 tons per square inch, or 39.69 megapascals (mPa). The average crushing strength for ashlar masonry and lintels averaged a healthy 4,600 pounds per square inch (31.7 mPa).<sup>73</sup> As to resistance to fire, Baker and Nangle carried out furnace tests at temperatures approaching 800 degrees centigrade, and of some 15 to 30 minutes duration, following which the specimens were plunged into cold water. Some of the very hard stones, especially granites, cracked in the furnace, while some shattered in the cold bath. Of all the building stones, Baker wrote that 'the sandstones came through best'.<sup>74</sup>

Early in the new century sandstone quarries began to open up in the eastern suburbs of Sydney, in Botany, Randwick and Waverley. From 1925 *Sands Directory* recorded that there was a Saunders Quarry in Curlewis Street, Bondi, while Robert Saunders' advertisements in *Building* magazine make it clear that this was an offshoot of his Pymont enterprise. Diminishing stocks of Pymont stone made the Bondi operation more productive than the original family holdings. In January 1929 Saunders Junior advertised his quarries at 'Pymont and Waverley' for the last time and in November that year an advertisement appeared for Saunders' 'Office and Quarries' at Curlewis Street. In the 1931 edition of *Sands* — for the first time since the *Directory* began publication in 1858 — there was no quarry owner listed for Pymont. The third generation of the Saunders family had concluded that there was no longer enough accessible stone there.

Robert Junior's brother Charles (1890-1971) joined the business in the years between the wars and continued there until the Bondi quarry closed. At least one other member of the family worked there, in the office. One dramatic event in Curlewis Street still remembered by Charles's children is that the police called one evening to report that some young boys had climbed over the gates to break into the quarry, stolen some sticks of gelignite and gone down to Bondi beach with them. One of the boys had the gelignite stuffed into his shirt when it exploded and killed him. Another boy was injured.<sup>75</sup>

The story of the Saunders quarry-masters, lasting more than 80 years, ended when the Bondi quarry closed in the late 1930s. The site was sold for development in 1950.<sup>76</sup>

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<sup>72</sup> H C Richards, *The Building Stones of Queensland*, p 137.

<sup>73</sup> Interpolated by Professor Emery Balint, in his *Study of Historic Commercial Building Construction* (University of NSW, 1977) p 32.

<sup>74</sup> Baker, op cit, p 15, interpreted in Balint, Howells & Smyth, *Warehouses & Woolstores of Sydney*, p 67.

<sup>75</sup> The Doreen Lanning collection.

<sup>76</sup> The Doreen Lanning collection.

## 4.5 Pymont transformed

The Pymont peninsula has experienced several character changes since the early days. The first was when its quiet rural character was gradually overtaken by industries which grew in scale and visibility, among them the City Iron Works, the Australasian Steam Navigation Company and the giant Colonial Sugar Refinery complex. For the entire period of the Saunders operations the place was a mixture of residential and industrial activities.

Pymont-Ultimo became an industrial centre whose workers were so numerous that local housing could accommodate only a minority. Most travelled from the city and easily-accessible surrounding suburbs.<sup>77</sup> Even the Saunders firm, which offered a higher proportion of employee housing than any other operation, relied on workers who lived (and generally walked from) beyond the peninsula.

Eventually, as heavy, ugly and environmentally unpleasant industry dominated, the area lost much of its attraction. Houses were demolished for the expansion of factories and for car parking. Even so, as a result of other changes such as the re-location of the big woolstores to Yennora, by the 1950s industries were closing down, maritime activities were diminishing and neglect became apparent. The population statistics mirrored the peninsula's boom and bust. The workforce declined from 19,000 in 1901 to 1,590 in 1981, its lowest figure.<sup>78</sup> This marked the second change in the area's character.

In the last decade or so, with the establishment of the City West Development Corporation and its successor the Sydney Harbour Foreshore Authority, urban regeneration is transforming the peninsula in ways that were unimaginable in the past. Old building stock has been swept away and an altogether new townscape created. Open space, mixed housing, 'white collar' businesses and harbour access have made the area once again desirable. By 2001 the residential population had already risen to more than 13,000 and its continued growth is characterised by high-density development which has given Pymont a different and striking quality.

The comprehensive redevelopment called Jackson's Landing, comprising some 1,500 residential occupancies, covers some of the land formerly in the proprietorship of the Saunders firm. Excavation for this construction work has provided the opportunity for yellowblock to be newly quarried and stockpiled for future building conservation work under the aegis of the Centenary Stonework Program.

In 2001, on the initiative of master stonemason George Proudman, the three Saunders quarries — 'Hell Hole', 'Purgatory' and 'Paradise' — were commemorated by a very elemental ensemble of three sets of sandstone blocks which were placed at the approximate sites where the memorable Pymont Yellowblock stone was originally extracted.

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<sup>77</sup> Fitzgerald & Golder, *passim*.

<sup>78</sup> *Ultimo + Pymont: Decade of Renewal* (Sydney Harbour Foreshore Authority, 2004) p 13.

## 4.6 Postscript

The impact of Charles Saunders and his successors on the character of Australian architecture is at the same time profound and inadequately appreciated. The eminent engineer Dr Emery Balint concurred that the Saunders family saga is one of success, earned by business acumen and technical competence. There is a place for the Saunders family in our heritage but as yet there is no sign in Pymont, other than the name of Saunders Street, to show where they prised the stone out of the rock and made it part of our life. Balint wrote: ‘A plaque or a cairn would be a suitable token of not only the Saunders operations but also of Pymont’s quarrying past.’<sup>79</sup>

## 4.7 Acknowledgements

The inspiration of others in compiling the foregoing narrative history is gratefully acknowledged.

Doreen Lanning, great-grand-daughter of Charles Saunders, whose collection of family papers and research was freely offered, made it possible to provide a historical and personal context for Charles Saunders and the business he founded.

Ron Powell, manager of the State Government Department of Commerce Centenary Stonework Program, has coordinated many important government building restoration projects and continues to supervise the stockpiling of Pymont stone so as to ensure the completion of similar work in the future. A recent major project was the conservation of the Australian Museum, one of the State’s most important 19th-century buildings. The work was made possible because the Stonework Program acquired more than 4,000 cubic metres of Pymont yellowblock sandstone in 2001. Before that there was no sandstone available in the world that was considered suitable.

Michael Clarke, of Engineers Australia, read the several drafts of this study and made many helpful comments. So did long-time colleague Ken Wyatt, also an engineer. Thanks to both of them.

Noel Irving was research assistant and, as well, helped considerably with checking and proof-reading.

The several other authors whose work has included consideration of the Saunders operation in Pymont-Ultimo — and from whose studies many extracts will be recognisable here — are also acknowledged with gratitude. Their publications are noted in the references cited at the foot of each page of the text and listed in the Bibliography given earlier.

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<sup>79</sup> Quoted from Eslick and Balint.